

**TECHCET**

Electronics Materials Information



**2023-2024**  
**CRITICAL MATERIALS**  
**REPORT™**  
PHOTOLITHOGRAPHY  
MATERIALS

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## RESEARCH METHODOLOGY

TEHCET employs subject matter experts having first-hand experience within the industries which they analyze. Most of TEHCET's analysts have over 25 years of direct and relevant experience in their field. Our analysts survey the commercial and technical staff of IC manufacturers and their suppliers, and conduct extensive research of literature and commerce statistics to ascertain the current and future market environment and global supply risks. Combining this data with TEHCET's proprietary, quantitative wafer forecast results in a viable long-term market forecast for a variety of process materials.

## READER'S NOTE

This report represents the interpretation and analysis of information generally available to the public or released by responsible agencies or individuals. Data was obtained from sources considered reliable. However, accuracy or completeness is not guaranteed.



## ANALYST BIOGRAPHY

**Karey Holland, Ph.D.** is Chief Strategist and Co-Founder of TECHCET. Dr Holland has specialized in advanced semiconductor transistor fabrication, including photolithography, CMP, ALD & CVD, metrology, and interconnect technologies for over 30 years. She was CTO of Revasum, Strategic Technical Marketing Manager at Edwards Vacuum, VP Process Technology at MegaFluid Systems, CTO of start-up NexPlanar, strategic marketing senior manager at FEI, on the Board of Directors at Nova Measuring Instruments, VP of technology at CMP pad supplier Thomas West, and CTO and VP of process technology at CMP OEM IPEC/SpeedFam-IPEC. Prior to IPEC, Dr. Holland was manager of manufacturing planning for Motorola's Microprocessor and Memory Technology Group. Her career began in process engineering at IBM. There, she was the manager of the first DUV-248nm lithography technology development team. Dr. Holland also worked on interconnect integration for 4 and 16 Mb DRAMs, which were the first chips in the world to use tungsten plugs and CMP for interconnect dielectrics. She holds a Ph.D. in analytical chemistry from Pennsylvania State University, a M.S. in analytical chemistry from Purdue University, and a B.A. in chemistry from Albion College.



**Karey Holland, Ph.D.**  
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# 2

## SCOPE, PURPOSE AND METHODOLOGY

## 2.1 PURPOSE

- This Critical Materials Report™ (CMR) provides focused information for supply-chain managers, process integration and R&D directors, as well as business development managers, and financial analysts. The report covers information about key suppliers, issues/trends in the material supply chain, estimates on supplier market share, and forecast for the material segments.
- This report covers the Photolithography materials market and supply chain for those materials used in semiconductor device fabrication. The report contains data and analysis from TECHCET's database and Sr. Analyst experience, as well as that developed from primary and secondary market research. For more information on TECHCET Critical materials Reports™ please go to <https://TEHCET.com>. This report also highlights technology-driven impacts on photolithography materials.

## 2.2 METHODOLOGY

- TECHCET employs subject matter experts having first-hand experience within the industries which they analyze. Most of TECHCET's analysts have over 25 years of direct and relevant experience in their field. Our analysts survey the commercial and technical staff of IC manufacturers and their suppliers and conduct extensive research of literature and commerce statistics to ascertain the current and future market environment and global supply risks. Combining this data with TECHCET's proprietary, quantitative wafer forecast results in a viable long-term market forecast for a variety of process materials.

## 2.3 OVERVIEW OF OTHER TECHCET CMR™ REPORTS

- TEHCET produces electronic material supply chain reports each year as one of its functions for the Critical Materials Council. Reports to be published in 2022 can be found at [www.techcet.com](http://www.techcet.com) and are listed in the table below:

TEHCET's Critical Materials Reports	
1	CMP Consumables (Pads & Slurry)
2	CMP Equipment Ancillaries (Conditioners, Filters, etc.)
3	CVD /ALD Hi K Precursors
4	CVD DIELECTRIC Precursors
5	Equipment Components – Quartz
6	Equipment Components – Silicon
7	Equipment Components – SiC/Ceramics
8	Gases - Electronic Specialty, Bulk & Rare Gases
9	Metal Plating Chemicals
10	Photoresists, Ancillaries & Extension Materials
11	Sputtering Targets
12	Wafers: Silicon, SOI
13	SiC Wafers & Manufacturing
14	Wet Chemicals / Specialty Cleans
15	Special Reports: Impact of US Expansions on Wet Chemicals Supply Chains